Part 5

Attachment Exhibit No. 9

Environmental Consulting & Technology, Inc.
7208 Falls of Neuse Road, Suite 102, Raleigh, North Carolina 27615

C4GT Environmental Assessment

Prepared for:

C4GT, LLC
Novi, Michigan

September 2016
ECT No. 160455-0200

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1. General Overview

Environmental Consulting & Technology, Inc. ("ECT") submits this Environmental Assessment in connection with the application of C4GT, LLC ("C4GT") to the State Corporation Commission ("SCC" or "Commission") for a certificate of public convenience and necessity ("CPCN") to construct and operate a natural gas fired combined cycle electrical generating facility, with a net nominal generating capacity of 1,060 megawatts, in Charles City, County, Virginia (the "Facility").

The Facility will interconnect to a natural gas pipeline located on its property. The electrical energy produced by the Facility will be transmitted to Virginia Electric and Power Company's ("VEPCO," d/b/a Dominion Virginia Power) transmission grid at either the 230 kV or 500 kV voltage levels at Chickahominy substation via new lines from the Facility. C4GT will construct approximately 12 miles of water and discharge pipelines and appurtenant facilities and an intake and outfall structure to service the Facility (collectively, the "Water Pipelines"). The Facility and the Water Pipelines will be referred to herein collectively as the "Project."

This Environmental Assessment is provided to assist the Commission in its consideration of the environmental impact of the Project as required by §§ 56-46.1.A and 56-580 D of the Code of Virginia ("Va. Code") and to satisfy the requirements of Section 12 of 20 VAC 5-302-20 of the Virginia Regulations. This Environmental Assessment and its attachments provide: (1) this General Overview, (2) an introduction, (3) a description of the proposed Project, (4) a description of the environmental setting, (5) an assessment of environmental effects and applicable permits that address any such impacts and responds to Section 12(a) through (l) of 20 VAC 5-302-20, and (6) a summary.

1.1 Project Description

Size:	1,060 MW Net (nominal) at 95 degrees.
Technology:	Combined Cycle: Either two (2) General Electric combustion turbines or two (2) Siemens combustion turbines with two (2) heat recovery Steam Generators with duct burners and one (1) steam turbine (2-on-1).
Fuel:	Exclusively pipeline-quality natural gas; one intrastate pipeline located on-site.
Location:	Charles City County, Virginia.
Operation:	Baseload power generation facility electrically interconnected with VEPCO in PJM Interconnection, LLC ("PJM").

Transmission:	C4GT anticipates that the Facility will interconnect to VEPCO's transmission grid at either the 230 kV or 500 kV voltage levels at Chickahominy substation via new lines from the Facility.
Water Pipelines:	Approximately 12 miles of subsurface water and discharge pipelines and appurtenant facilities including an intake and outfall structure to draw water for use in the Facility and to discharge wastewater.

2. Introduction

The Project has been designed to minimize its environmental impact. The Project is regulated by numerous federal, Virginia, and local governmental entities charged with responsibility for protecting Virginia's environment and natural resources.

Section 56-46.1 of the Va. Code provides that:

> A. Whenever the Commission is required to approve the construction of any electrical utility facility, it shall give consideration to the effect of that facility on the environment and establish such conditions as may be desirable or necessary to minimize adverse environmental impact. In order to avoid duplication of governmental activities, any valid permit or approval required for an electric generating plant and associated facilities issued or granted by a federal, state, or local governmental entity charged by law with responsibility for issuing permits or approvals regulating environmental impact and mitigation of adverse environmental impact or for other specific public interest issues such as building codes, transportation plans, and public safety, whether such permit or approval is granted prior to or after the Commission's decision, shall be deemed to satisfy the requirements of this section with respect to all matters that (i) are governed by the permit or approval or (ii) are within the authority of, and were considered by, the governmental entity in issuing such permit or approval, and the Commission shall impose no additional conditions with respect to such matters.

Section 56-580 D of the Va. Code is virtually identical to the language set forth in § 56-46.1 A.

Section 56-580 D of the Va. Code provides in pertinent part that:

> In review of a petition for a certificate to construct and operate a generating facility described in this subsection, the Commission shall give consideration to the effect of the facility and associated facilities on the environment and establish such conditions as may be desirable or necessary to minimize adverse environmental impact as provided in § 56-46.1 ... In order to avoid duplication of governmental activities, any valid permit or approval required for an electric generating plant and associated facilities issued or granted by a federal, state or local governmental entity charged by law with responsibility for issuing permits or approvals regulating environmental impact and mitigation of adverse environmental impact or for other specific public interest issues such as building codes, transportation plans, and public safety, whether such permit or approval is prior to

> or after the Commission's decision, shall be deemed to satisfy the requirements of this section with respect to all matters that (i) are governed by the permit or approval or (ii) are within the authority of, and were considered by, the governmental entity in issuing such permit or approval, and the Commission shall impose no additional conditions with respect to such matters.

C4GT is actively working with numerous federal, Virginia, and local governmental entities charged with issuing environment-related permits or approvals. These regulatory agencies have been and are engaged in reviewing and permitting the Facility and ensuring that any environmental impact is minimized. To the extent available, applications or other communications with these agencies have been attached or referenced in this Environmental Assessment so that reviewing agencies can avoid unnecessary duplication of effort as directed in the statute. Specific information is provided below.

3. Description of Proposed Project

3.1 Introduction

C4GT"s Facility will be exclusively fueled by natural gas and will be designed to minimize adverse environmental effects.

3.2 Project Location and Plot Plan

A U.S. Geological Survey ("USGS") topographic map showing the Facility location and the surrounding area is attached as Exhibit 9A. A plot plan of the Facility with the General Electric arrangement is attached as Exhibit 9B. A plot plan of the Facility with the Siemens arrangement is attached as Exhibit 9C.

A U.S. Geological Survey ("USGS") topographic map showing the Water Pipelines proposed location and the surrounding area is attached as Exhibit 9D.

3.3 Equipment and Operations

The Facility will consist of a "2-on-1" power block capable of producing a total nominal power output of approximately net 1,060 MW. The power block will consist of either two (2) General Electric combustion turbines ("CT") or two (2) Siemens CTs, as well as two (2) heat recovery steam generators ("HRSG") with duct burners ("DB"), and one steam turbine ("ST"). The CT/HRSG/ST combination is commonly termed a combined cycle configuration. Under both alternatives, the CTs and the HRSGs will utilize only natural gas.

Air emissions will be controlled by the use of Best Available Control Technology ("BACT"). Dry low-nitrogen oxide ("NOx") combustors will be used in the CTs. In addition, a selective catalytic reduction ("SCR") system will be installed to further reduce NOx emissions. An oxidation catalyst will be installed to minimize carbon monoxide ("CO") and volatile organic compounds ("VOC") emissions.

A CT operates by combusting high-pressure air using a low-NOx burner unit, where it mixes with natural gas. This mixture is subjected to a near constant pressure combustion process. This pressure increases the working fluid temperature, further increasing its potential energy.

Following combustion, the mixture is expanded and cooled through a series of turbine stages. This release of potential energy from this combustion process drives the turbine blade shaft. This energy is used to spin an electro-magnetic generator to produce electricity.

Since the temperature of the exhaust gases exiting the turbine blades are well above the starting ambient conditions, they possess additional recoverable thermal energy. The turbine exhaust is routed to an HRSG. Each HRSG has an associated DB that can be used to further increase the temperature of the turbine exhaust gas for additional steam generation. In the HRSG, the turbine exhaust is used to generate steam which is then sent through a ST that drives another electro-magnetic generator, creating additional electricity. Exhaust gases from each HRSG will be vented to the atmosphere through separate stacks with expected heights of approximately 180 feet above ground level.

The Facility will include an emergency generator and an emergency firewater pump. The emergency generator will be driven by a 3,633-bhp (2,500 kW) diesel-fired engine and is expected to operate less than 500 hours per year. The emergency generator will provide power when station power is unavailable, but is not intended to provide sufficient power for a black start. The emergency firewater pump will be driven by a 315-bhp horsepower diesel-fired engine and is expected to operate less than 500 hours per year.

A cooling tower will be integral to operation of the Facility. The majority of the cooling water will be used in the surface condenser to absorb the heat rejected from the steam turbine. A dedicated set of cooling water pumps is provided for this service. Cooling tower water is not used for direct cooling of plant auxiliaries; a closed loop auxiliary cooling system is provided for this purpose. The cooling tower is designed to evaporate clean water to provide cooling. Some small water droplets (referred to as drift) evaporate from the top of the tower, along with some dissolved solids. Particulate matter emissions will be controlled by high efficiency drift eliminators which will limit drift to 0.0005% of the recirculated water rate.

Other systems supporting plant operations and safety include:

- Cooling tower water treatment system; plant sumps, sump pumps, and oil-water separator;
- Feed water treatment system;
- Ammonia tank (storing 19% aqueous ammonia) for use with the SCR system;
- Plant and instrument air compressors and auxiliary equipment;
- Lift station; and
- Steam and water sampling systems.

The design, layout, and operation of the Facility may undergo additional optimization to make it safer, easier to operate and more cost effective. Any relevant changes will be reviewed with the Virginia Department of Environmental Quality ("DEQ") to verify that no adverse environmental impacts result from such changes.

3.4 Natural Gas and Electrical Transmission Lines

The Site is crossed by (i) a 16 inch natural gas transmission pipeline owned by Virginia Natural Gas ("VNG"), a wholly owned subsidiary of AGL Resources, and (ii) 500 kV and 230 kV electrical transmission lines owned by VEPCO. The availability of the natural gas pipeline and transmission lines will minimize construction-related effects on the surrounding environment. C4GT anticipates that the Facility will interconnect to VEPCO's transmission grid at either 230 kV or 500 kV voltage levels at Chickahominy substation via new lines from the Site.

4. Description of Environmental Setting

The Facility will be constructed in Charles City County, Virginia on an approximately 88-acre parcel west of Route 106 (the "Site"). The Facility will be constructed on the east side of the site. The Site is located along Roxbury Road (State Route 106), approximately 2,000 feet north and west of its intersection with Chambers Road (State Route 685). The Site is less than one mile from the existing VEPCO Chickahominy substation. The Site is undeveloped, consisting of a recently logged area and a pond/wetland complex that crosses the central part of the property with a stream exiting the property to the north. Access to the Site is provided by Roxbury Road (State Route 106) which runs along the entire East portion of the Site.

The Water Pipelines will generally consist of an intake pipe and a discharge pipe that will run for approximately 12 miles from the Facility to the James River. The pipelines will begin at the Facility and run to State Route 106 and then within the VDOT right of way for State Route 106 until they enter an easement to be acquired by C4GT to the James River. An intake and outfall structure and appurtenant structures will be installed within the easement to service the Facility.

Initial wetlands delineations indicate that the Facility and Water Pipelines will not result in permanent impacts to streams and wetlands. The U.S. Army Corps of Engineers (USACE) will be asked to confirm this delineation and to confirm whether any jurisdictional waters will be impacted by the Project and whether a wetland permit will be required. C4GT will, to the extent practicable, avoid, minimize, and if necessary, mitigate for impacts to jurisdictional waters.

5. Assessment of Environmental Effects

The following portion of this Environmental Assessment provides an analysis of the environmental impact of the Project to enable the Commission to make the determinations required by §§ 56-46.1 and 56-580 D of the Va. Code. The following analysis includes, but is not limited to, the impacts on the environment and natural resources, analysis of alternatives considered, unavoidable adverse impacts, and mitigation measures proposed to minimize unavoidable impacts. The following subsections address each of the items identified in 20 VAC 5-302-20, 12 (a) – (n).

5.1 Required air permits, expected restrictions, expected emissions, rates of emissions, and any needed emissions offsets or allowances. [20 VAC 5-302-20, 12 (a)]

5.1.1. Emissions

Air emissions from the Facility and impacts on ambient air quality will be addressed in the Prevention of Significant Deterioration ("PSD") permit that is expected to be issued by the DEQ.

The initial step of DEQ's application process for this permit was submitted to the DEQ in June 2016 ("Air Permit Application") for both the General Electric and the Siemens arrangements. A copy of Volume I of the Air Permit Application for the General Electric arrangement is attached as Exhibit 9E and a copy of Volume II of the Air Permit Application for the Siemens arrangement is attached as Exhibit 9F. On July 22, 2016 public notice of the permit application was provided and a copy of that public notice is attached as Exhibit 9G. As announced in the public notice, a public information briefing was held on August 30, 2016 to review the Air Permit Application.

It is anticipated that predicted impacts of the Facility will demonstrate no adverse impact in comparison to ambient air quality standards. The proposed BACT for the Facility includes fueling the combustion turbines with natural gas, incorporating inlet air coolers and good combustion, operating, and maintenance practices. The proposed BACT for NOx is the installation of dry low NOx burners, a SCR system and good combustion practices. The proposed BACT for both CO and VOCs is the installation of an oxidation catalyst system and good combustion practices.

5.1.2. Applicable Permit Requirements

Review under the PSD Program is required for the construction of any new source with emissions that exceed the PSD major source thresholds outlined in 9 VAC 5-80-1615. Large fossil fuel-tired steam electric plants, such as the proposed Facility, have a PSD major source threshold level of 100 tons per year ("tpy") of any regulated pollutant. The Facility is subject to PSD permitting requirements for NO_x, PM_{10}, $PM_{2.5}$, CO, sulfuric acid mist, and GHGs.

With respect to air quality, new and existing industrial sources are classified as either major or minor sources based on their potential to emit ("PTE") air contaminants. This classification is also affected in part by whether the area in which the source is located has attained the National Ambient Air Quality Standards ("NAAQS"). An area is classified as attainment if the ambient air quality concentration for a specific pollutant, as measured by a monitor, is below the standard concentration level for a set of averaging periods. The Richmond-Petersburg Area, which includes Charles City County, is designated as an attainment/maintenance area for the ozone 8-hour NAAQS.

For most activities, a major source is defined as one which has the PTE of 250 tons per year of any regulated air contaminant. For a special group of 28 industrial activities, the United States Environmental Protection Agency ("EPA") has defined the major source emission threshold to be 100 tons per year. Steam-Electric Power Generation is one of these special groups: the proposed Facility will be classified as a "major stationary source" of air emissions based on this 100 ton per year threshold.

In addition to the PSD/NSR program requirements, New Source Performance Standards ("NSPS") requirements apply to the Facility: Subparts KKKK and TTTT apply to the CTs.

No National Emission Standard for Hazardous Air Pollutants ("NESHAP") for sources regulated under 40 CFR Part 61 are applicable to the Project. The C4GT Project will not be a major source of hazardous air pollutants regulated under 40 CFR Part 63.

The CTs will be subject to the Acid Rain Program ("ARP"). 40 CFR Parts 72 and 75. The ARP requires emission monitoring for multiple pollutants and the acquisition or generation of emissions allowances.

The Facility will be subject to the Title V Federal Operating Permit Program because the Facility will have criteria pollutant emissions levels above 100 tpy. C4GT will be required to submit a Title V operating permit application to the state of Virginia in a timely manner so it can be deemed complete within 12 months of first fire of the new CT units.

Virginia specific requirements also apply to this Facility, including general rules for fossil-fuel combustion. The state-specific fossil-fuel combustion rules are less stringent than the applicable NSPS regulations. Therefore, compliance with NSPS requirements ensures compliance with the DEQ combustion rules.

5.1.3. Ambient Air Quality Effects

A detailed regulatory applicability analysis and emission calculations for the Facility has been provided to the DEQ in connection with the Air Permit Application. The modeling and other supplemental information required by the DEQ to issue a permit for the construction and operation of the Facility or as requested by the DEQ in connection with the Air Permit Application will be provided.

Any entity proposing to build and operate a new power plant is required under the Clean Air Act and by the DEQ to conduct air quality analyses. These air quality analyses are used by the DEQ and EPA to assess the impacts that emissions from a new facility may have on air quality to ensure that the health and welfare of the public will be protected. The results of computer modeling using conservative assumptions are required to demonstrate that the limits requested in the application ensure that the Facility will not cause or contribute to an exceedance of applicable NAAQS, which are designed to protect human health with an adequate margin of safety.

In addition to the analyses required for the protection of human health and welfare, additional air quality analyses are required to ensure that the natural and cultural resources of certain designated national parks and wilderness areas (i.e., Class I Areas) are not adversely affected by air pollution. Federal Land Managers are tasked with protecting specific Class I Areas and have defined "air quality related values" ("AQRVs") to assess the effects of new and existing facilities on these areas. These AQRVs include visibility, regional haze, and the deposition of nitrates and sulfates in soil and surface waters.

Through the use of predictive air dispersion modeling techniques approved by DEQ and EPA, it is expected that impacts from the Facility will not cause or contribute to an exceedance of NAAQS or adversely affect AQRVs.

5.2 Required permits for water withdrawals, expected restrictions, the amount of water estimated to be used, the source of such water, identification of a backup source of water, if any, and identification of any facilities that need to be constructed to provide such water. [20 VAC 5-302-20, 12 (b)]

5.2.1. Water Use

The operation of the Facility will require an average daily withdrawal of approximately 7.4 MGD of water. Water will be withdrawn from the James River using an intake structure enclosure. C4GT will own and operate Water Pipelines and appurtenant facilities including pumps, and will obtain an easement for the Water Pipelines. The Water Pipelines and any necessary pumps will be constructed by C4GT under a contract and construction permit from the local permitting and DEQ authorities. The Water Pipelines construction permit will require inspections to ensure quality control in the process. There are no expected adverse effects on human and aquatic life due to the C4GT's water usage and C4GT will be required to work with the relevant agencies to ensure installed structures do not result in adverse impacts. Construction of the Water Pipelines will require approvals from the Virginia Marine Resources Commission (VMRC), DEQ, Charles City County, and the USACE.

5.3 Required permits for water discharge and potential impacts on regional water flows. [20 VAC 5-302-20, 12 (c)]

The Facility will discharge cooling and process water effluent into the James River from an outfall. The majority of the discharge will be comprised of cooling tower blowdown which is surface water that is cycled through the cooling tower. In addition, recycled water from the reverse osmosis system, HRSG blowdown, and low volume waste streams, including oil-water separator discharges, will be mixed with the cooling tower blowdown and discharged to the James River. Because both the source water and effluent are in the James River, the Facility will receive pass-through credits for nutrient loads and will not be adding additional loads to the river. Sanitary sewer will be discharged from the Facility through use of a septic field. On June 28, 2016, C4GT submitted a Virginia Pollutant Discharge Elimination System ("VPDES") Permit application to the DEQ. Due to several recent changes in anticipated operations, including a change in source water from ground water to surface water and a new outfall location, C4GT intends to file a VPDES permit application modification and plan in September 2016.

5.3.1. Storm Water

Both DEQ and Charles City County regulate storm water discharges from the Site. Storm water discharges during construction of the Facility will be addressed through a new general permit for construction storm water discharges, as well as the implementation of an Erosion and Sediment Control Plan and a Storm Water Pollution Prevention Plan as required by Charles City County and the DEQ. Storm water control measures will include Best Management Practices ("BMP") such as a retention pond, extended detention, and low impact design ("LID").

BMPs for the Site will be designed and implemented in accordance with the requirements of the Virginia storm water BMP Clearinghouse. During construction turbidity levels will be controlled with the use of structural BMPs. C4GT will consider the use of super silt fences,

check dams, temporary sediment traps, stabilization matting and phasing to limit disturbed areas for extended periods of time. Nonstructural BMPs, including routine inspections and daily housekeeping, will also be implemented.

Post-construction storm water discharges will be addressed through the Facility design, which will not allow storm water to come in contact with potentially polluting industrial materials. All lubricating and hydraulic oils, and any other small quantities of chemicals that may be located on-site, will be maintained under roof or within secondary containment. Where there is potential for storm water coming in contact with oils, oil water separators will be incorporated into the management system for additional treatment. Permanent structural BMPs, such as retention ponds, will also be evaluated to control post-construction storm water on the Site. LID is expected to be implemented by conserving and limiting use of natural resources, minimizing concentrated runoff, allowing water to percolate and directing runoff to natural areas. C4GT anticipates that any applicable storm water permit requirements will be imposed through a general permit.

5.4 Required permits related to the wetlands and an identification of any tidal and nontidal wetlands located near the proposed site and how such wetlands will be impacted by applicant's proposed facility. [20 VAC 5-301-20, 12 (d)]

The C4GT Site currently consists of a recently logged area and a pond/wetland complex that crosses the central part of the property with a stream exiting the property to the north. C4GT plans to avoid impacts to Waters of the US (WOUS).

Potential impacts to WOUS from the Water Pipeline construction will be minimized and addressed by permits issued by the Corps and DEQ if required. Since the natural gas pipeline is already located onsite, there are no onsite wetland impacts associated with the natural gas pipeline. Less than 1 mile of electrical interconnection line will need to be constructed in order to interconnect with the Chickahominy Substation. The interconnection to the Chickahominy Substation is still under review by PJM and the final routing will consider minimizing impact to the WOUS by using existing transmission corridors or similar right of ways.

C4GT is currently working to complete a Joint Permit Application ("JPA") and anticipates submitting the JPA in late September. The JPA is a joint process that includes reviews by Virginia Marine Resource Commission, DEQ, the US Corps of Engineers, and Charles City County. The JPA is a very inclusive application that involves the permitting of impacts to streams and wetlands through the construction of the Facility, Water Pipelines, intake and outfall, as well as the surface water withdrawal. Through this application, C4GT must demonstrate that the Facility and Water Pipelines will not result in significant adverse impacts to waters of the U.S., threatened & endangered species, and cultural resources. To date, C4GT has conducted field delineations (wetlands, T&E, cultural resources). The JPA will include a wetlands report and a cultural resources report. In addition, the JPA will also include an Alternatives Analysis, which will include a description of the Facility and the Water Pipelines, its proposed impacts, and an evaluation of other onsite and offsite alternatives that were considered. The Alternatives Analysis will also include a description of the surface water withdrawal and its potential impacts to beneficial uses, such as species habitat, river flow, and to other users in the area.

5.5 Impact of solid and hazardous wastes on local water resources. [20 VAC 5-301-20, 12 (e)]

Any solid and/or hazardous waste generated by the Facility will be minimized or reduced at the source, re-used, or recycled to the extent possible. The majority of generated waste will be handled by licensed third party contractors who will ensure provisions are in place that prevent contamination of surface water.

5.6 Impact on natural heritage resources, and on threatened and endangered species. [20 VAC 5-301-20, 12 (f)]

It is anticipated that there will be minimal impact to any threatened or endangered species or their habitat. This conclusion will be confirmed through coordination with state and federal agencies during the process of applying for a Clean Water Act Section 404/401 permit.

ECT conducted a field reconnaissance of the Site and the proposed Water Pipelines, including the location for the proposed intake and outfall structures to determine the limits of disturbance to ascertain whether habitat for Virginia or federally listed threatened, endangered, and candidate species may be present, and habitat information for each species was compared to that found on the Site. An image of the proposed Water Pipelines route can be seen in Exhibit 9E.

Based on the Virginia Department of Conservation and Recreation ("VDCR") Natural Heritage Database, Virginia Fish and Wildlife Information Service ("VaFWIS") species occurrence data, and U.S. Fish and Wildlife Service ("USFWS") there are six state and federally listed species, an additional seven species that are state listed only, and one species of concern that may occur on or near the Site, along the Water Pipelines route, or at the intake/outfall structures as summarized below.

Scientific Name	Common Name	Likelihood of Occurrence
Juncus caesariensis	New Jersey rush	May occur on northern edge of plant site
Aeschynomene virginica	Sensitive joint-vetch[1]	May occur on shores of James
Pleurobema collina	James spinymussel	Not known to occur below Richmond
Acipenser oxyrinchus	Atlantic sturgeon	Occurs in James near intake/outfall

Alasmidonta heterodon	Dwarf wedgemussel	Not known to occur in Charles City Co.
Myotis septentrionalis	Northern long-eared bat	Potential along waterline
Laterallus jamaicensis	Black rail	No habitat on-site
Corynorhinus rafinesquii macrotis	Rafinesque"s eastern big-eared bat	Potential along waterline
Myotis lucifugus lucifugus	Little brown bat	Potential along waterline
Perimyotis subflavus	Tri-colored bat	Potential along waterline
Falco peregrinus	Peregrine falcon	Potentially transient or along waterline
Lanius ludovicianus migrans	Migrant loggerhead shrike	Potentially transient or along waterline
Fusconaia masoni	Atlantic pigtoe	Low - No habitat onsite
Haliaeetus leucocephalus	Bald eagle	Nests near James

The field evaluation determined that some of these species have the potential to occur along the Water Pipelines route (sensitive joint-vetch, four bat species, and two bird species) or are known to occur in or near the James River (sturgeon and bald eagle). There is also a chance that the New Jersey rush could occur in the cypress swamp on the northern edge of the Site. However, it is highly unlikely that C4GT will impact the habitats of these species. There is very little potential for habitat at the Site as it was previously cleared for timber harvesting. While the New Jersey Rush could be present, it would be located within a wetland which will be avoided. Impact to habitat along the Water Pipelines route will be minimized as the Water Pipelines will be subsurface and only minor tree clearing will be required. Aquatic species will not be impacted as the intake has been designed in accordance with the Department of Game and Inland Fisheries ("DGIF") guidance, which is conservative to protect against potential issues with impingement mortality and entrainment. The discharge will be permitted under a VPDES permit that is consistent with water quality standards designed to protect aquatic life.

C4GT will coordinate with state and federal agencies to avoid or limit impacts to listed species including, as required, a construction schedule that avoids roosting, spawning, growing, or nesting seasons.

5.7 Erosion and sediment control measures. [20 VAC 5-301-20, 12 (g)]

As discussed with regard to storm water management for the Facility, requirements for storm water management will be compliant with Charles City County and the DEQ regulations, including implementation of an Erosion and Sediment Control Plan and a SWPPP.

5.8 Archaeological, historic, scenic, cultural, or architectural resources in the area. [20 VAC 5-301-20, 12 (h)]

Impacts to cultural and historical resources are reviewed and regulated by Virginia Department of Historical Resources ("VDHR") and Charles City County. Cultural and historical resources surveys of the Site, Water Pipelines route and the intake/outfall locations have already been completed. Based on the preliminary findings, construction of the Project should not impact cultural or historical resources. A previously recorded historical site was identified on the proposed Water Pipelines route, but during the field survey it was determined that the area was previously significantly disturbed. C4GT will consult with VDHR as necessary to determine if this area needs to be avoided. If required, this section of the Water Pipelines will be rerouted.

5.9 Chesapeake Bay Preservation Areas designated by the locality. [20 VAC 5-301-20, 12 (i)]

As part of the Chesapeake Bay Preservation Act, Charles City County created a program to protect Resource Protection Areas ("RPAs") and Resource Management Areas ("RMAs"). The RPA consists of a 100 foot wide vegetated buffer adjacent to and landward of tidal shores, tidal wetlands, non-tidal wetlands connected by surface flow and contiguous to tidal wetlands, and waterbodies with perennial flow. The RMA consists of areas inland of the RPA that, if improperly managed or developed, could result in adverse impacts to water quality. The Project should not affect any RPAs as attempts will be made to design structures outside of this 100-foot buffer. The Facility site will be constructed outside of the RPA boundaries, and the Water Pipelines will be directionally drilled where feasible to avoid impacts to WOUS and RPAs. If open cut trenches are required for the Water Pipelines, the impacts will be temporary as the area will be restored. The Site is also located within the RMA. The Project will avoid impacts to the RMA through the design and implementation of its storm water management plans discussed above in coordination with DEQ and Charles City County.

5.10 Wildlife resources. [20 VAC 5-301-20, 12 (j)]

C4GT will utilize fences to control access to the Facility by wildlife. There are no anticipated impacts to wildlife resources associated with the Site and Water Pipelines and it is anticipated that there will be minimal impact to wildlife habitat based on a minimal amount of forest clearance required. Because the Site was previous cleared for timber harvesting purposes by Charles City County, little wildlife habitat exists.

5.11 Agricultural and forest resources and federal, local, state or private parks and recreation areas. [20 VAC 5-301-20, 12 (k)]

There are no expected impacts to agricultural areas and impacts to recreational areas will be *de minimis*. The Facility Site is non-agricultural land and zoned for heavy industrial uses by Charles City County. There are no expected impacts on nearby land. There will be minimal

impact to forest resources as the Site has already been cleared. It is anticipated that only minimal forested land will be cleared in connection with the Facility, including small sections along the Water Pipeline route. Although the intake and outfall structures will be constructed in the James River, this is not expected to result in any permanent impact to recreation. The intake will be located in Shirley Cove, which is used primarily for industrial purposes. The outfall will consist of subsurface piping that connects to an approximately 50-foot diffuser. The construction of both structures will be evaluated by VMRC and USACE who will only issue permits if the Project is deemed to not pose a threat to navigation.

5.12 Use of pesticides and herbicides. [20 VAC 5-301-20, 12 (l)]

To the extent that any pesticides or herbicides are used in connection with the Facility, only selective, low volume applications of EPA-approved substances will be used. Only EPA and FWS-approved substances will be used in or around surface water.

6. Assessment Summary

The Facility and Water Pipelines will be constructed and operated with minimal adverse environmental effects. C4GT already has or will apply for all required permits, which will impose all necessary conditions to ensure protection of public health and the environment. Regulatory agencies with oversight responsibilities for all environmental aspects of the Project will continue to be engaged in the review of this Project, exercising oversight and applying permitting or regulatory requirements on the construction and operation of the Project as required. Due to the design and operation of the Project, as well as the applicable regulatory requirements, the Project will have no or minimal adverse environmental effects.

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1. General Overview

Environmental Consulting & Technology, Inc. ("ECT") submits this Environmental Assessment in connection with the application of C4GT, LLC ("C4GT") to the State Corporation Commission ("SCC" or "Commission") for a certificate of public convenience and necessity ("CPCN") to construct and operate a natural gas fired combined cycle electrical generating facility, with a net nominal generating capacity of 1,060 megawatts, in Charles City, County, Virginia (the "Facility").

The Facility will interconnect to a natural gas pipeline located on its property. The electrical energy produced by the Facility will be transmitted to Virginia Electric and Power Company's ("VEPCO," d/b/a Dominion Virginia Power) transmission grid at either the 230 kV or 500 kV voltage levels at Chickahominy substation via new lines from the Facility. C4GT will construct approximately 12 miles of water and discharge pipelines and appurtenant facilities and an intake and outfall structure to service the Facility (collectively, the "Water Pipelines"). The Facility and the Water Pipelines will be referred to herein collectively as the "Project."

This Environmental Assessment is provided to assist the Commission in its consideration of the environmental impact of the Project as required by §§ 56-46.1.A and 56-580 D of the Code of Virginia ("Va. Code") and to satisfy the requirements of Section 12 of 20 VAC 5-302-20 of the Virginia Regulations. This Environmental Assessment and its attachments provide: (1) this General Overview, (2) an introduction, (3) a description of the proposed Project, (4) a description of the environmental setting, (5) an assessment of environmental effects and applicable permits that address any such impacts and responds to Section 12(a) through (l) of 20 VAC 5-302-20, and (6) a summary.

1.1 Project Description

Size:	1,060 MW Net (nominal) at 95 degrees.
Technology:	Combined Cycle: Either two (2) General Electric combustion turbines or two (2) Siemens combustion turbines with two (2) heat recovery Steam Generators with duct burners and one (1) steam turbine (2-on-1).
Fuel:	Exclusively pipeline-quality natural gas; one intrastate pipeline located on-site.
Location:	Charles City County, Virginia.
Operation:	Baseload power generation facility electrically interconnected with VEPCO in PJM Interconnection, LLC ("PJM").

Transmission:	C4GT anticipates that the Facility will interconnect to VEPCO's transmission grid at either the 230 kV or 500 kV voltage levels at Chickahominy substation via new lines from the Facility.
Water Pipelines:	Approximately 12 miles of subsurface water and discharge pipelines and appurtenant facilities including an intake and outfall structure to draw water for use in the Facility and to discharge wastewater.

2. Introduction

The Project has been designed to minimize its environmental impact. The Project is regulated by numerous federal, Virginia, and local governmental entities charged with responsibility for protecting Virginia's environment and natural resources.

Section 56-46.1 of the Va. Code provides that:

> A. Whenever the Commission is required to approve the construction of any electrical utility facility, it shall give consideration to the effect of that facility on the environment and establish such conditions as may be desirable or necessary to minimize adverse environmental impact. In order to avoid duplication of governmental activities, any valid permit or approval required for an electric generating plant and associated facilities issued or granted by a federal, state, or local governmental entity charged by law with responsibility for issuing permits or approvals regulating environmental impact and mitigation of adverse environmental impact or for other specific public interest issues such as building codes, transportation plans, and public safety, whether such permit or approval is granted prior to or after the Commission's decision, shall be deemed to satisfy the requirements of this section with respect to all matters that (i) are governed by the permit or approval or (ii) are within the authority of, and were considered by, the governmental entity in issuing such permit or approval, and the Commission shall impose no additional conditions with respect to such matters.

Section 56-580 D of the Va. Code is virtually identical to the language set forth in § 56-46.1 A.

Section 56-580 D of the Va. Code provides in pertinent part that:

> In review of a petition for a certificate to construct and operate a generating facility described in this subsection, the Commission shall give consideration to the effect of the facility and associated facilities on the environment and establish such conditions as may be desirable or necessary to minimize adverse environmental impact as provided in § 56-46.1 ... In order to avoid duplication of governmental activities, any valid permit or approval required for an electric generating plant and associated facilities issued or granted by a federal, state or local governmental entity charged by law with responsibility for issuing permits or approvals regulating environmental impact and mitigation of adverse environmental impact or for other specific public interest issues such as building codes, transportation plans, and public safety, whether such permit or approval is prior to

or after the Commission's decision, shall be deemed to satisfy the requirements of this section with respect to all matters that (i) are governed by the permit or approval or (ii) are within the authority of, and were considered by, the governmental entity in issuing such permit or approval, and the Commission shall impose no additional conditions with respect to such matters.

C4GT is actively working with numerous federal, Virginia, and local governmental entities charged with issuing environment-related permits or approvals. These regulatory agencies have been and are engaged in reviewing and permitting the Facility and ensuring that any environmental impact is minimized. To the extent available, applications or other communications with these agencies have been attached or referenced in this Environmental Assessment so that reviewing agencies can avoid unnecessary duplication of effort as directed in the statute. Specific information is provided below.

3. Description of Proposed Project

3.1 Introduction

C4GT"s Facility will be exclusively fueled by natural gas and will be designed to minimize adverse environmental effects.

3.2 Project Location and Plot Plan

A U.S. Geological Survey ("USGS") topographic map showing the Facility location and the surrounding area is attached as Exhibit 9A. A plot plan of the Facility with the General Electric arrangement is attached as Exhibit 9B. A plot plan of the Facility with the Siemens arrangement is attached as Exhibit 9C.

A U.S. Geological Survey ("USGS") topographic map showing the Water Pipelines proposed location and the surrounding area is attached as Exhibit 9D.

3.3 Equipment and Operations

The Facility will consist of a "2-on-1" power block capable of producing a total nominal power output of approximately net 1,060 MW. The power block will consist of either two (2) General Electric combustion turbines ("CT") or two (2) Siemens CTs, as well as two (2) heat recovery steam generators ("HRSG") with duct burners ("DB"), and one steam turbine ("ST"). The CT/HRSG/ST combination is commonly termed a combined cycle configuration. Under both alternatives, the CTs and the HRSGs will utilize only natural gas.

Air emissions will be controlled by the use of Best Available Control Technology ("BACT"). Dry low-nitrogen oxide ("NOx") combustors will be used in the CTs. In addition, a selective catalytic reduction ("SCR") system will be installed to further reduce NOx emissions. An oxidation catalyst will be installed to minimize carbon monoxide ("CO") and volatile organic compounds ("VOC") emissions.

A CT operates by combusting high-pressure air using a low-NOx burner unit, where it mixes with natural gas. This mixture is subjected to a near constant pressure combustion process. This pressure increases the working fluid temperature, further increasing its potential energy.

Following combustion, the mixture is expanded and cooled through a series of turbine stages. This release of potential energy from this combustion process drives the turbine blade shaft. This energy is used to spin an electro-magnetic generator to produce electricity.

Since the temperature of the exhaust gases exiting the turbine blades are well above the starting ambient conditions, they possess additional recoverable thermal energy. The turbine exhaust is routed to an HRSG. Each HRSG has an associated DB that can be used to further increase the temperature of the turbine exhaust gas for additional steam generation. In the HRSG, the turbine exhaust is used to generate steam which is then sent through a ST that drives another electro-magnetic generator, creating additional electricity. Exhaust gases from each HRSG will be vented to the atmosphere through separate stacks with expected heights of approximately 180 feet above ground level.

The Facility will include an emergency generator and an emergency firewater pump. The emergency generator will be driven by a 3,633-bhp (2,500 kW) diesel-fired engine and is expected to operate less than 500 hours per year. The emergency generator will provide power when station power is unavailable, but is not intended to provide sufficient power for a black start. The emergency firewater pump will be driven by a 315-bhp horsepower diesel-fired engine and is expected to operate less than 500 hours per year.

A cooling tower will be integral to operation of the Facility. The majority of the cooling water will be used in the surface condenser to absorb the heat rejected from the steam turbine. A dedicated set of cooling water pumps is provided for this service. Cooling tower water is not used for direct cooling of plant auxiliaries; a closed loop auxiliary cooling system is provided for this purpose. The cooling tower is designed to evaporate clean water to provide cooling. Some small water droplets (referred to as drift) evaporate from the top of the tower, along with some dissolved solids. Particulate matter emissions will be controlled by high efficiency drift eliminators which will limit drift to 0.0005% of the recirculated water rate.

Other systems supporting plant operations and safety include:

- Cooling tower water treatment system; plant sumps, sump pumps, and oil-water separator;
- Feed water treatment system;
- Ammonia tank (storing 19% aqueous ammonia) for use with the SCR system;
- Plant and instrument air compressors and auxiliary equipment;
- Lift station; and
- Steam and water sampling systems.

The design, layout, and operation of the Facility may undergo additional optimization to make it safer, easier to operate and more cost effective. Any relevant changes will be reviewed with the Virginia Department of Environmental Quality ("DEQ") to verify that no adverse environmental impacts result from such changes.

3.4 Natural Gas and Electrical Transmission Lines

The Site is crossed by (i) a 16 inch natural gas transmission pipeline owned by Virginia Natural Gas ("VNG"), a wholly owned subsidiary of AGL Resources, and (ii) 500 kV and 230 kV electrical transmission lines owned by VEPCO. The availability of the natural gas pipeline and transmission lines will minimize construction-related effects on the surrounding environment. C4GT anticipates that the Facility will interconnect to VEPCO's transmission grid at either 230 kV or 500 kV voltage levels at Chickahominy substation via new lines from the Site.

4. Description of Environmental Setting

The Facility will be constructed in Charles City County, Virginia on an approximately 88-acre parcel west of Route 106 (the "Site"). The Facility will be constructed on the east side of the site. The Site is located along Roxbury Road (State Route 106), approximately 2,000 feet north and west of its intersection with Chambers Road (State Route 685). The Site is less than one mile from the existing VEPCO Chickahominy substation. The Site is undeveloped, consisting of a recently logged area and a pond/wetland complex that crosses the central part of the property with a stream exiting the property to the north. Access to the Site is provided by Roxbury Road (State Route 106) which runs along the entire East portion of the Site.

The Water Pipelines will generally consist of an intake pipe and a discharge pipe that will run for approximately 12 miles from the Facility to the James River. The pipelines will begin at the Facility and run to State Route 106 and then within the VDOT right of way for State Route 106 until they enter an easement to be acquired by C4GT to the James River. An intake and outfall structure and appurtenant structures will be installed within the easement to service the Facility.

Initial wetlands delineations indicate that the Facility and Water Pipelines will not result in permanent impacts to streams and wetlands. The U.S. Army Corps of Engineers (USACE) will be asked to confirm this delineation and to confirm whether any jurisdictional waters will be impacted by the Project and whether a wetland permit will be required. C4GT will, to the extent practicable, avoid, minimize, and if necessary, mitigate for impacts to jurisdictional waters.

5. Assessment of Environmental Effects

The following portion of this Environmental Assessment provides an analysis of the environmental impact of the Project to enable the Commission to make the determinations required by §§ 56-46.1 and 56-580 D of the Va. Code. The following analysis includes, but is not limited to, the impacts on the environment and natural resources, analysis of alternatives considered, unavoidable adverse impacts, and mitigation measures proposed to minimize unavoidable impacts. The following subsections address each of the items identified in 20 VAC 5-302-20, 12 (a) – (n).

5.1 Required air permits, expected restrictions, expected emissions, rates of emissions, and any needed emissions offsets or allowances. [20 VAC 5-302-20, 12 (a)]

5.1.1. Emissions

Air emissions from the Facility and impacts on ambient air quality will be addressed in the Prevention of Significant Deterioration ("PSD") permit that is expected to be issued by the DEQ.

The initial step of DEQ's application process for this permit was submitted to the DEQ in June 2016 ("Air Permit Application") for both the General Electric and the Siemens arrangements. A copy of Volume I of the Air Permit Application for the General Electric arrangement is attached as Exhibit 9E and a copy of Volume II of the Air Permit Application for the Siemens arrangement is attached as Exhibit 9F. On July 22, 2016 public notice of the permit application was provided and a copy of that public notice is attached as Exhibit 9G. As announced in the public notice, a public information briefing was held on August 30, 2016 to review the Air Permit Application.

It is anticipated that predicted impacts of the Facility will demonstrate no adverse impact in comparison to ambient air quality standards. The proposed BACT for the Facility includes fueling the combustion turbines with natural gas, incorporating inlet air coolers and good combustion, operating, and maintenance practices. The proposed BACT for NOx is the installation of dry low NOx burners, a SCR system and good combustion practices. The proposed BACT for both CO and VOCs is the installation of an oxidation catalyst system and good combustion practices.

5.1.2. Applicable Permit Requirements

Review under the PSD Program is required for the construction of any new source with emissions that exceed the PSD major source thresholds outlined in 9 VAC 5-80-1615. Large fossil fuel-tired steam electric plants, such as the proposed Facility, have a PSD major source threshold level of 100 tons per year ("tpy") of any regulated pollutant. The Facility is subject to PSD permitting requirements for NO_x, PM_{10}, $PM_{2.5}$, CO, sulfuric acid mist, and GHGs.

With respect to air quality, new and existing industrial sources are classified as either major or minor sources based on their potential to emit ("PTE") air contaminants. This classification is also affected in part by whether the area in which the source is located has attained the National Ambient Air Quality Standards ("NAAQS"). An area is classified as attainment if the ambient air quality concentration for a specific pollutant, as measured by a monitor, is below the standard concentration level for a set of averaging periods. The Richmond-Petersburg Area, which includes Charles City County, is designated as an attainment/maintenance area for the ozone 8-hour NAAQS.

For most activities, a major source is defined as one which has the PTE of 250 tons per year of any regulated air contaminant. For a special group of 28 industrial activities, the United States Environmental Protection Agency ("EPA") has defined the major source emission threshold to be 100 tons per year. Steam-Electric Power Generation is one of these special groups: the proposed Facility will be classified as a "major stationary source" of air emissions based on this 100 ton per year threshold.

In addition to the PSD/NSR program requirements, New Source Performance Standards ("NSPS") requirements apply to the Facility: Subparts KKKK and TTTT apply to the CTs.

No National Emission Standard for Hazardous Air Pollutants ("NESHAP") for sources regulated under 40 CFR Part 61 are applicable to the Project. The C4GT Project will not be a major source of hazardous air pollutants regulated under 40 CFR Part 63.

The CTs will be subject to the Acid Rain Program ("ARP"). 40 CFR Parts 72 and 75. The ARP requires emission monitoring for multiple pollutants and the acquisition or generation of emissions allowances.

The Facility will be subject to the Title V Federal Operating Permit Program because the Facility will have criteria pollutant emissions levels above 100 tpy. C4GT will be required to submit a Title V operating permit application to the state of Virginia in a timely manner so it can be deemed complete within 12 months of first fire of the new CT units.

Virginia specific requirements also apply to this Facility, including general rules for fossil-fuel combustion. The state-specific fossil-fuel combustion rules are less stringent than the applicable NSPS regulations. Therefore, compliance with NSPS requirements ensures compliance with the DEQ combustion rules.

5.1.3. Ambient Air Quality Effects

A detailed regulatory applicability analysis and emission calculations for the Facility has been provided to the DEQ in connection with the Air Permit Application. The modeling and other supplemental information required by the DEQ to issue a permit for the construction and operation of the Facility or as requested by the DEQ in connection with the Air Permit Application will be provided.

Any entity proposing to build and operate a new power plant is required under the Clean Air Act and by the DEQ to conduct air quality analyses. These air quality analyses are used by the DEQ and EPA to assess the impacts that emissions from a new facility may have on air quality to ensure that the health and welfare of the public will be protected. The results of computer modeling using conservative assumptions are required to demonstrate that the limits requested in the application ensure that the Facility will not cause or contribute to an exceedance of applicable NAAQS, which are designed to protect human health with an adequate margin of safety.

In addition to the analyses required for the protection of human health and welfare, additional air quality analyses are required to ensure that the natural and cultural resources of certain designated national parks and wilderness areas (i.e., Class I Areas) are not adversely affected by air pollution. Federal Land Managers are tasked with protecting specific Class I Areas and have defined "air quality related values" ("AQRVs") to assess the effects of new and existing facilities on these areas. These AQRVs include visibility, regional haze, and the deposition of nitrates and sulfates in soil and surface waters.

Through the use of predictive air dispersion modeling techniques approved by DEQ and EPA, it is expected that impacts from the Facility will not cause or contribute to an exceedance of NAAQS or adversely affect AQRVs.

5.2 Required permits for water withdrawals, expected restrictions, the amount of water estimated to be used, the source of such water, identification of a backup source of water, if any, and identification of any facilities that need to be constructed to provide such water. [20 VAC 5-302-20, 12 (b)]

5.2.1. Water Use

The operation of the Facility will require an average daily withdrawal of approximately 7.4 MGD of water. Water will be withdrawn from the James River using an intake structure enclosure. C4GT will own and operate Water Pipelines and appurtenant facilities including pumps, and will obtain an easement for the Water Pipelines. The Water Pipelines and any necessary pumps will be constructed by C4GT under a contract and construction permit from the local permitting and DEQ authorities. The Water Pipelines construction permit will require inspections to ensure quality control in the process. There are no expected adverse effects on human and aquatic life due to the C4GT's water usage and C4GT will be required to work with the relevant agencies to ensure installed structures do not result in adverse impacts. Construction of the Water Pipelines will require approvals from the Virginia Marine Resources Commission (VMRC), DEQ, Charles City County, and the USACE.

5.3 Required permits for water discharge and potential impacts on regional water flows. [20 VAC 5-302-20, 12 (c)]

The Facility will discharge cooling and process water effluent into the James River from an outfall. The majority of the discharge will be comprised of cooling tower blowdown which is surface water that is cycled through the cooling tower. In addition, recycled water from the reverse osmosis system, HRSG blowdown, and low volume waste streams, including oil-water separator discharges, will be mixed with the cooling tower blowdown and discharged to the James River. Because both the source water and effluent are in the James River, the Facility will receive pass-through credits for nutrient loads and will not be adding additional loads to the river. Sanitary sewer will be discharged from the Facility through use of a septic field. On June 28, 2016, C4GT submitted a Virginia Pollutant Discharge Elimination System ("VPDES") Permit application to the DEQ. Due to several recent changes in anticipated operations, including a change in source water from ground water to surface water and a new outfall location, C4GT intends to file a VPDES permit application modification and plan in September 2016.

5.3.1. Storm Water

Both DEQ and Charles City County regulate storm water discharges from the Site. Storm water discharges during construction of the Facility will be addressed through a new general permit for construction storm water discharges, as well as the implementation of an Erosion and Sediment Control Plan and a Storm Water Pollution Prevention Plan as required by Charles City County and the DEQ. Storm water control measures will include Best Management Practices ("BMP") such as a retention pond, extended detention, and low impact design ("LID").

BMPs for the Site will be designed and implemented in accordance with the requirements of the Virginia storm water BMP Clearinghouse. During construction turbidity levels will be controlled with the use of structural BMPs. C4GT will consider the use of super silt fences,

check dams, temporary sediment traps, stabilization matting and phasing to limit disturbed areas for extended periods of time. Nonstructural BMPs, including routine inspections and daily housekeeping, will also be implemented.

Post-construction storm water discharges will be addressed through the Facility design, which will not allow storm water to come in contact with potentially polluting industrial materials. All lubricating and hydraulic oils, and any other small quantities of chemicals that may be located on-site, will be maintained under roof or within secondary containment. Where there is potential for storm water coming in contact with oils, oil water separators will be incorporated into the management system for additional treatment. Permanent structural BMPs, such as retention ponds, will also be evaluated to control post-construction storm water on the Site. LID is expected to be implemented by conserving and limiting use of natural resources, minimizing concentrated runoff, allowing water to percolate and directing runoff to natural areas. C4GT anticipates that any applicable storm water permit requirements will be imposed through a general permit.

5.4 Required permits related to the wetlands and an identification of any tidal and nontidal wetlands located near the proposed site and how such wetlands will be impacted by applicant's proposed facility. [20 VAC 5-301-20, 12 (d)]

The C4GT Site currently consists of a recently logged area and a pond/wetland complex that crosses the central part of the property with a stream exiting the property to the north. C4GT plans to avoid impacts to Waters of the US (WOUS).

Potential impacts to WOUS from the Water Pipeline construction will be minimized and addressed by permits issued by the Corps and DEQ if required. Since the natural gas pipeline is already located onsite, there are no onsite wetland impacts associated with the natural gas pipeline. Less than 1 mile of electrical interconnection line will need to be constructed in order to interconnect with the Chickahominy Substation. The interconnection to the Chickahominy Substation is still under review by PJM and the final routing will consider minimizing impact to the WOUS by using existing transmission corridors or similar right of ways.

C4GT is currently working to complete a Joint Permit Application ("JPA") and anticipates submitting the JPA in late September. The JPA is a joint process that includes reviews by Virginia Marine Resource Commission, DEQ, the US Corps of Engineers, and Charles City County. The JPA is a very inclusive application that involves the permitting of impacts to streams and wetlands through the construction of the Facility, Water Pipelines, intake and outfall, as well as the surface water withdrawal. Through this application, C4GT must demonstrate that the Facility and Water Pipelines will not result in significant adverse impacts to waters of the U.S., threatened & endangered species, and cultural resources. To date, C4GT has conducted field delineations (wetlands, T&E, cultural resources). The JPA will include a wetlands report and a cultural resources report. In addition, the JPA will also include an Alternatives Analysis, which will include a description of the Facility and the Water Pipelines, its proposed impacts, and an evaluation of other onsite and offsite alternatives that were considered. The Alternatives Analysis will also include a description of the surface water withdrawal and its potential impacts to beneficial uses, such as species habitat, river flow, and to other users in the area.

5.5 Impact of solid and hazardous wastes on local water resources. [20 VAC 5-301-20, 12 (e)]

Any solid and/or hazardous waste generated by the Facility will be minimized or reduced at the source, re-used, or recycled to the extent possible. The majority of generated waste will be handled by licensed third party contractors who will ensure provisions are in place that prevent contamination of surface water.

5.6 Impact on natural heritage resources, and on threatened and endangered species. [20 VAC 5-301-20, 12 (f)]

It is anticipated that there will be minimal impact to any threatened or endangered species or their habitat. This conclusion will be confirmed through coordination with state and federal agencies during the process of applying for a Clean Water Act Section 404/401 permit.

ECT conducted a field reconnaissance of the Site and the proposed Water Pipelines, including the location for the proposed intake and outfall structures to determine the limits of disturbance to ascertain whether habitat for Virginia or federally listed threatened, endangered, and candidate species may be present, and habitat information for each species was compared to that found on the Site. An image of the proposed Water Pipelines route can be seen in Exhibit 9E.

Based on the Virginia Department of Conservation and Recreation ("VDCR") Natural Heritage Database, Virginia Fish and Wildlife Information Service ("VaFWIS") species occurrence data, and U.S. Fish and Wildlife Service ("USFWS") there are six state and federally listed species, an additional seven species that are state listed only, and one species of concern that may occur on or near the Site, along the Water Pipelines route, or at the intake/outfall structures as summarized below.

Scientific Name	Common Name	Likelihood of Occurrence
Juncus caesariensis	New Jersey rush	May occur on northern edge of plant site
Aeschynomene virginica	Sensitive joint-vetch[1]	May occur on shores of James
Pleurobema collina	James spinymussel	Not known to occur below Richmond
Acipenser oxyrinchus	Atlantic sturgeon	Occurs in James near intake/outfall

Alasmidonta heterodon	Dwarf wedgemussel	Not known to occur in Charles City Co.
Myotis septentrionalis	Northern long-eared bat	Potential along waterline
Laterallus jamaicensis	Black rail	No habitat on-site
Corynorhinus rafinesquii macrotis	Rafinesque"s eastern big-eared bat	Potential along waterline
Myotis lucifugus lucifugus	Little brown bat	Potential along waterline
Perimyotis subflavus	Tri-colored bat	Potential along waterline
Falco peregrinus	Peregrine falcon	Potentially transient or along waterline
Lanius ludovicianus migrans	Migrant loggerhead shrike	Potentially transient or along waterline
Fusconaia masoni	Atlantic pigtoe	Low - No habitat onsite
Haliaeetus leucocephalus	Bald eagle	Nests near James

The field evaluation determined that some of these species have the potential to occur along the Water Pipelines route (sensitive joint-vetch, four bat species, and two bird species) or are known to occur in or near the James River (sturgeon and bald eagle). There is also a chance that the New Jersey rush could occur in the cypress swamp on the northern edge of the Site. However, it is highly unlikely that C4GT will impact the habitats of these species. There is very little potential for habitat at the Site as it was previously cleared for timber harvesting. While the New Jersey Rush could be present, it would be located within a wetland which will be avoided. Impact to habitat along the Water Pipelines route will be minimized as the Water Pipelines will be subsurface and only minor tree clearing will be required. Aquatic species will not be impacted as the intake has been designed in accordance with the Department of Game and Inland Fisheries ("DGIF") guidance, which is conservative to protect against potential issues with impingement mortality and entrainment. The discharge will be permitted under a VPDES permit that is consistent with water quality standards designed to protect aquatic life.

C4GT will coordinate with state and federal agencies to avoid or limit impacts to listed species including, as required, a construction schedule that avoids roosting, spawning, growing, or nesting seasons.

5.7 Erosion and sediment control measures. [20 VAC 5-301-20, 12 (g)]

As discussed with regard to storm water management for the Facility, requirements for storm water management will be compliant with Charles City County and the DEQ regulations, including implementation of an Erosion and Sediment Control Plan and a SWPPP.

5.8 Archaeological, historic, scenic, cultural, or architectural resources in the area. [20 VAC 5-301-20, 12 (h)]

Impacts to cultural and historical resources are reviewed and regulated by Virginia Department of Historical Resources ("VDHR") and Charles City County. Cultural and historical resources surveys of the Site, Water Pipelines route and the intake/outfall locations have already been completed. Based on the preliminary findings, construction of the Project should not impact cultural or historical resources. A previously recorded historical site was identified on the proposed Water Pipelines route, but during the field survey it was determined that the area was previously significantly disturbed. C4GT will consult with VDHR as necessary to determine if this area needs to be avoided. If required, this section of the Water Pipelines will be rerouted.

5.9 Chesapeake Bay Preservation Areas designated by the locality. [20 VAC 5-301-20, 12 (i)]

As part of the Chesapeake Bay Preservation Act, Charles City County created a program to protect Resource Protection Areas ("RPAs") and Resource Management Areas ("RMAs"). The RPA consists of a 100 foot wide vegetated buffer adjacent to and landward of tidal shores, tidal wetlands, non-tidal wetlands connected by surface flow and contiguous to tidal wetlands, and waterbodies with perennial flow. The RMA consists of areas inland of the RPA that, if improperly managed or developed, could result in adverse impacts to water quality. The Project should not affect any RPAs as attempts will be made to design structures outside of this 100-foot buffer. The Facility site will be constructed outside of the RPA boundaries, and the Water Pipelines will be directionally drilled where feasible to avoid impacts to WOUS and RPAs. If open cut trenches are required for the Water Pipelines, the impacts will be temporary as the area will be restored. The Site is also located within the RMA. The Project will avoid impacts to the RMA through the design and implementation of its storm water management plans discussed above in coordination with DEQ and Charles City County.

5.10 Wildlife resources. [20 VAC 5-301-20, 12 (j)]

C4GT will utilize fences to control access to the Facility by wildlife. There are no anticipated impacts to wildlife resources associated with the Site and Water Pipelines and it is anticipated that there will be minimal impact to wildlife habitat based on a minimal amount of forest clearance required. Because the Site was previous cleared for timber harvesting purposes by Charles City County, little wildlife habitat exists.

5.11 Agricultural and forest resources and federal, local, state or private parks and recreation areas. [20 VAC 5-301-20, 12 (k)]

There are no expected impacts to agricultural areas and impacts to recreational areas will be *de minimis*. The Facility Site is non-agricultural land and zoned for heavy industrial uses by Charles City County. There are no expected impacts on nearby land. There will be minimal

impact to forest resources as the Site has already been cleared. It is anticipated that only minimal forested land will be cleared in connection with the Facility, including small sections along the Water Pipeline route. Although the intake and outfall structures will be constructed in the James River, this is not expected to result in any permanent impact to recreation. The intake will be located in Shirley Cove, which is used primarily for industrial purposes. The outfall will consist of subsurface piping that connects to an approximately 50-foot diffuser. The construction of both structures will be evaluated by VMRC and USACE who will only issue permits if the Project is deemed to not pose a threat to navigation.

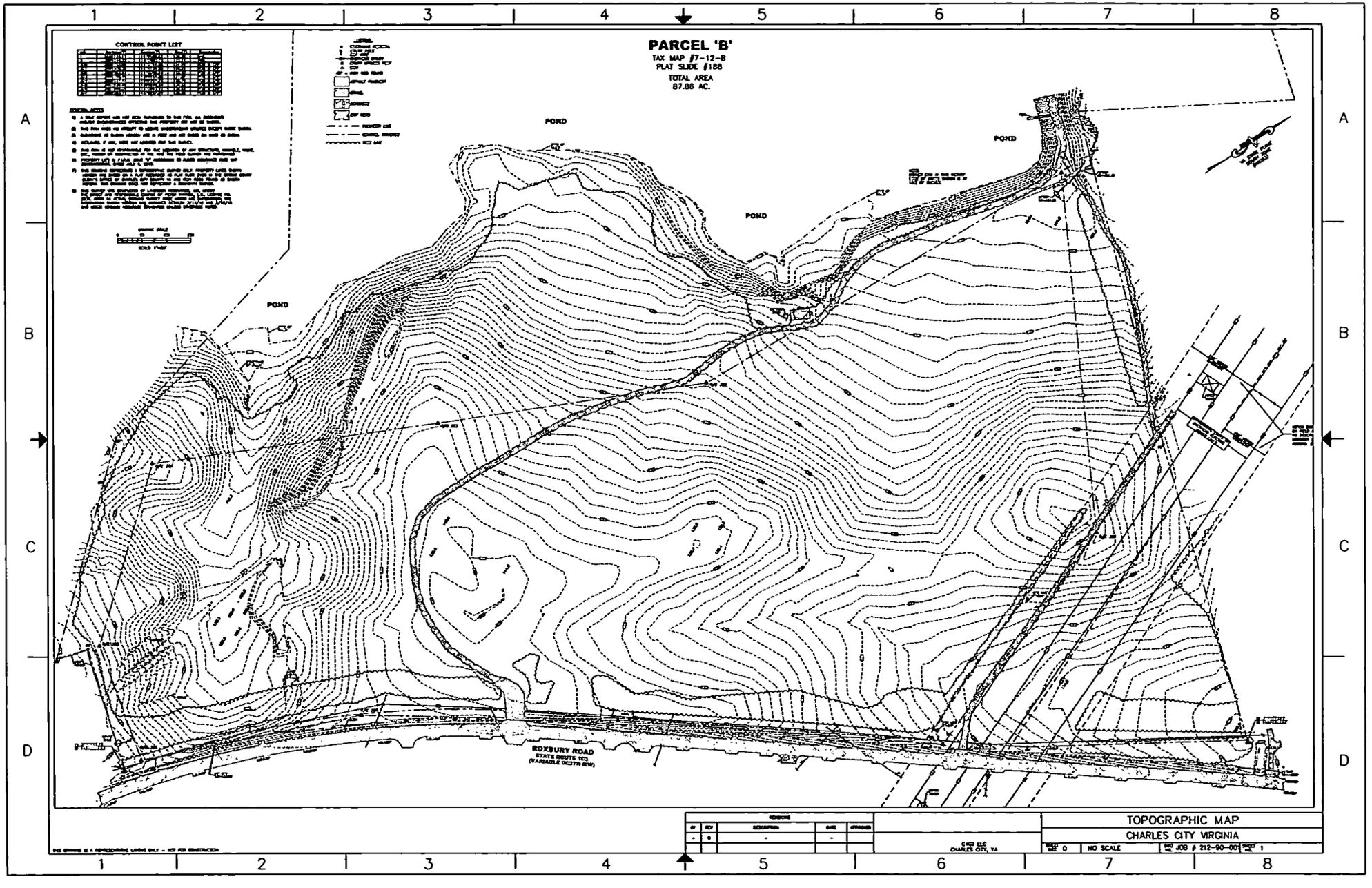
5.12 Use of pesticides and herbicides. [20 VAC 5-301-20, 12 (l)]

To the extent that any pesticides or herbicides are used in connection with the Facility, only selective, low volume applications of EPA-approved substances will be used. Only EPA and FWS-approved substances will be used in or around surface water.

6. Assessment Summary

The Facility and Water Pipelines will be constructed and operated with minimal adverse environmental effects. C4GT already has or will apply for all required permits, which will impose all necessary conditions to ensure protection of public health and the environment. Regulatory agencies with oversight responsibilities for all environmental aspects of the Project will continue to be engaged in the review of this Project, exercising oversight and applying permitting or regulatory requirements on the construction and operation of the Project as required. Due to the design and operation of the Project, as well as the applicable regulatory requirements, the Project will have no or minimal adverse environmental effects.

Attachment
Exhibit No. 9A


PARCEL 'B'
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POND
POND
POND
POND
ROXBURY ROAD
STATE ROUTE 143
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CONTROL POINT LIST
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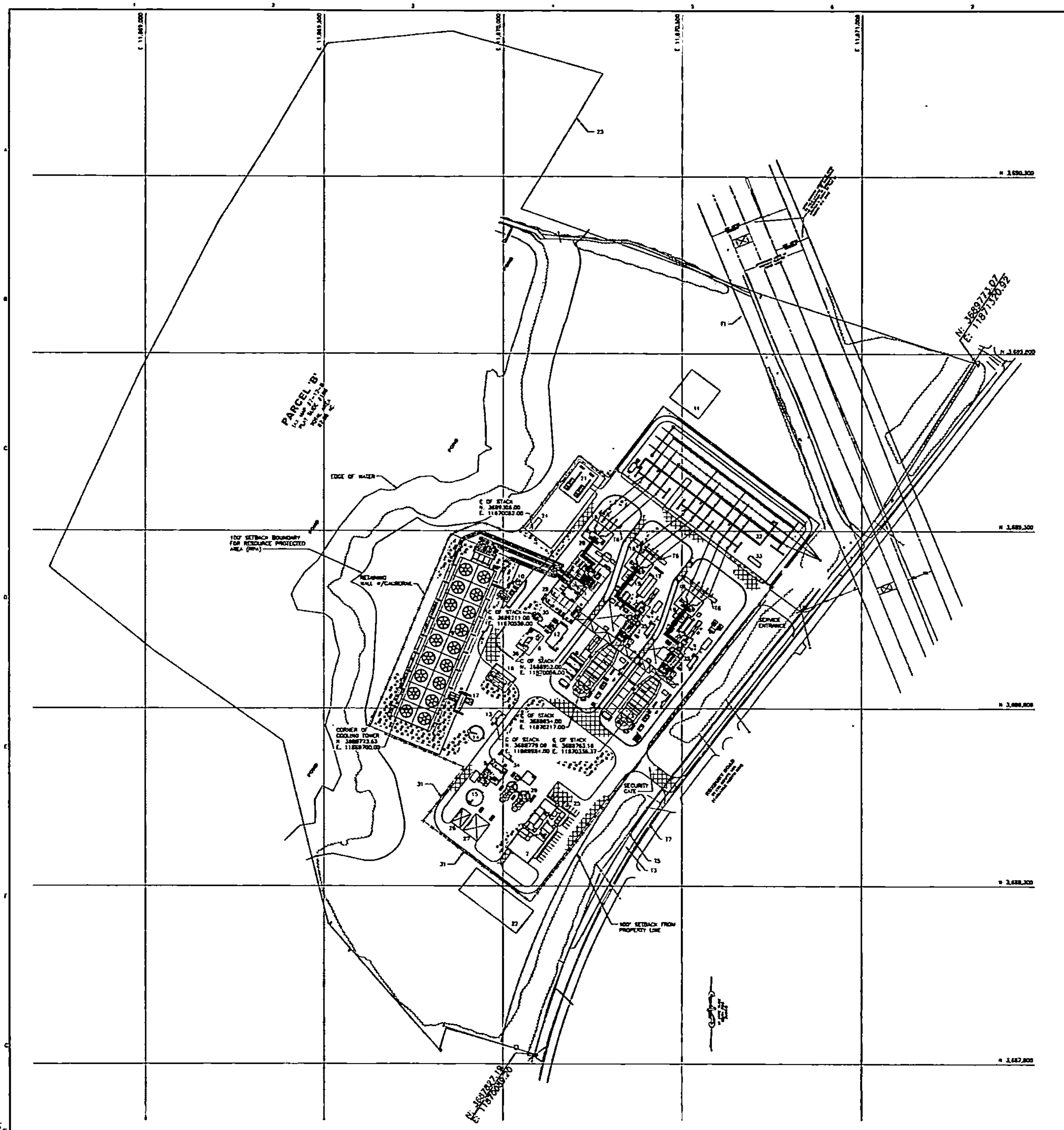
CHARLES CITY VIRGINIA
NO SCALE

16092008G

Attachment
Exhibit No. 9B



FACILITIES LEGEND						
ID	FACILITY	FOUNDATION	ORIGIN LOCATION NORTH	EAST	ELEVATION (SEE NOTE 2)	REMARKS
1	STEAM TURBINE ENCLOSURE	-	-	-	-	-
2	COMBUSTION TURBINE ENCLOSURE	-	-	-	163'-6"	TOP OF ENCLOSURE
3	HEAT RECOVERY STEAM GENERATOR (HRSG)	-	-	-	275'-6"	TOP OF SILENCERS
4	HEAT RECOVERY STEAM GENERATOR STACK	-	-	-	340'-6"	TOP OF STACK
5	WATER TREATMENT ENCLOSURE	-	-	-	163'-6"	ENCLOSURE PEAK
6	AUXILIARY BOILER ENCLOSURE	-	-	-	160'-6"	ENCLOSURE PEAK
7	ADMIN/CONTROL/WAREHOUSE/MAINT BUILDING	-	-	-	160'-6"	BUILDING PEAK
8	BOILER FEED PUMPS ENCLOSURE	-	-	-	167'-6"	ENCLOSURE HIGH POINT
9	COOLING TOWER	-	-	-	183'-0 1/2"	TOP OF FAN HOUSING
10	COOLING TOWER CHEMICAL FEED ENCLOSURE	-	-	-	153'-6"	ENCLOSURE HIGH POINT
11	GAS METERING YARD	-	-	-	-	BY OTHERS
12	POWER DISTRIBUTION CENTER (MEDIUM VOLTAGE)	-	-	-	155'-6"	ENCLOSURE PEAK
13	FIRE PUMP ENCLOSURE	-	-	-	140'-6"	ENCLOSURE HIGH POINT & TOP OF STACK
14	SERVICE FIRE WATER STORAGE TANK	-	-	-	178'-3"	TOP OF TANK
15	DEMIN WATER STORAGE TANK	-	-	-	179'-6"	TOP OF TANK
16	AMMONIA UNLOADING/STORAGE AREA	-	-	-	143'-6"	TOP OF PLATFORM
17	COOLING TOWER POWER DISTRIBUTION CENTER	-	-	-	147'-6"	ENCLOSURE HIGH POINT
18	COMBUSTION TURBINE STEP-UP TRANSFORMER	-	-	-	158'-6"	TOP OF FIRE WALL
19	COMBUSTION TURBINE AUX TRANSFORMER	-	-	-	158'-6"	TOP OF FIRE WALL
20	STEAM TURBINE STEP-UP TRANSFORMER	-	-	-	158'-6"	TOP OF FIRE WALL
21	GAS COMPRESSOR ENCLOSURE	-	-	-	160'-6"	ENCLOSURE PEAK
22	SEPTIC TANK/AND SANITARY TILE FIELD	-	-	-	-	-
23	PROPERTY BOUNDARY	-	-	-	-	-
24	GAS DEWPOINT HEATER	-	-	-	151'-6"	TOP OF STACK
25	PARKING	-	-	-	-	-
26	HYDROGEN STORAGE AREA	-	-	-	-	-
27	DEMIN WATER TRAILER AREA	-	-	-	-	-
28	STEAM TURBINE ENCLOSURE	-	-	-	232'-6"	ENCLOSURE PEAK
29	SETTLING TANK	-	-	-	150'-6"	TOP OF TANK
30	STANDBY DIESEL GENERATOR	-	-	-	143'-6"	TOP OF ENCLOSURE & TOP OF STACK
31	SECURITY FENCE	-	-	-	-	-
32	500kV SWITCHYARD	-	-	-	-	-
33	SWITCHYARD CONTROLS ENCLOSURE	-	-	-	-	-
34	WATER TREATMENT POWER DISTRIBUTION CENTER	-	-	-	-	-
35	TURBINE AIR INLET FILTER	-	-	-	216'-6"	TOP OF FILTER
36	AUX BOILER STACK	-	-	-	180'-6"	TOP OF STACK

TERMINAL POINTS

- T1 NATURAL GAS
- T2 WASTE WATER (HOLD)
- T3 RAW WATER SUPPLY
- T4 NOT USED
- T5 TELEPHONE/DATA INTERFACE
- T6 POWER EXPORT (HIGH SIDE CSU)
- T7 ROAD ACCESS

GENERAL LEGEND

ASPHALT ROAD SURFACING — AGGREGATE SURFACING — CONCRETE SURFACING

NOTES

1. ALL COORDINATES ARE PROVIDED IN VIRGINIA STATE PLANE SOUTH ZONE (NAD83).

NOT TO BE USED FOR CONSTRUCTION

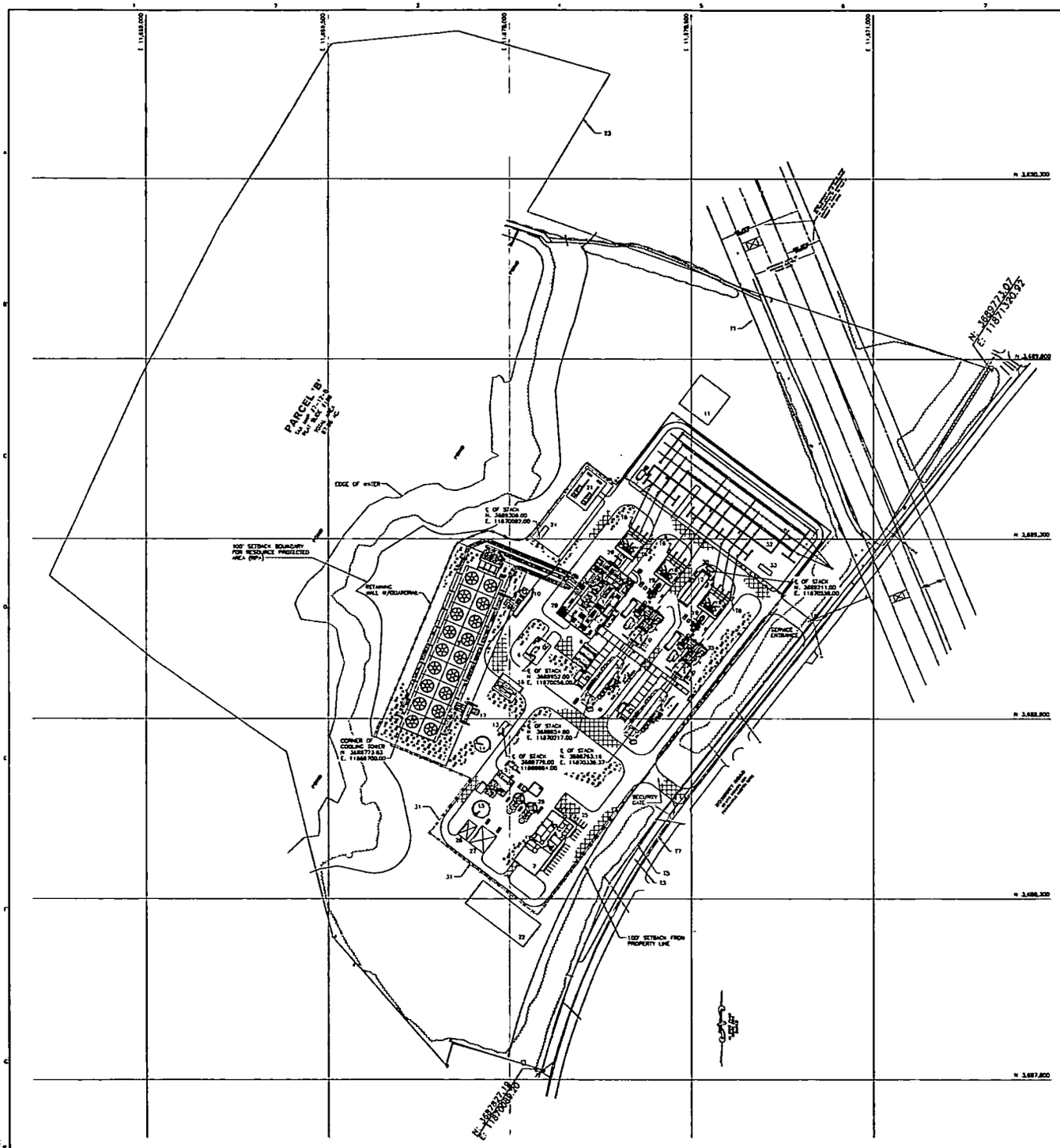
THE DISTRIBUTION AND USE OF THE NATIVE FORMAT CAD FILE OF THIS DRAWING IS UNCONTROLLED. THE USER SHALL VERIFY TRACEABILITY OF THIS DRAWING TO THE LATEST CONTROLLED VERSION.

NO	DATE	REVISIONS AND RECORD OF ISSUE
B	19/MAY/15	REVISED PER CLIENT COMMENTS
A	15/MAY/15	AIR PERMIT APPLICATION SUPPORT (DE ABBOT)

100' 50' 0 100' 200' — 1"=100'

BLACK & VEATCH — C4GT — C4GT PROJECT, CHARLES CITY, VA — GENERAL ARRANGEMENT SITE ARRANGEMENT - GE — 191629-0GAU-G1002 — REV B

Attachment
Exhibit No. 9C



FACILITIES LEGEND

ID	FACILITY	FOUNDATION	FROZEN LOCATION NORTH	FROZEN LOCATION EAST	ELEVATION (SEE NOTE 1)	REMARKS
1	STEAM TURBINE ENCLOSURE	-	-	-	-	-
2	COMBUSTION TURBINE ENCLOSURE	-	-	-	113'-0"	TOP OF ENCLOSURE
3	HEAT RECOVERY STEAM GENERATOR (HRSG)	-	-	-	253'-0"	TOP OF SILENCERS
4	HEAT RECOVERY STEAM GENERATOR STACK	-	-	-	270'-0"	TOP OF STACK
5	WATER TREATMENT ENCLOSURE	-	-	-	113'-0"	ENCLOSURE PEAK
6	AUXILIARY BOILER ENCLOSURE	-	-	-	108'-0"	ENCLOSURE PEAK
7	ADMIN/CONTROL/WAREHOUSE/SHOP BUILDING	-	-	-	108'-0"	BUILDING PEAK
8	BOILER FEED PUMPS ENCLOSURE	-	-	-	103'-0"	ENCLOSURE HIGH POINT
9	COOLING TOWER	-	-	-	113'-0 1/2"	TOP OF FAN HOUSING
10	COOLING TOWER CHEMICAL FEED ENCLOSURE	-	-	-	113'-0"	ENCLOSURE HIGH POINT
11	GAS METERING YARD	-	-	-	-	BY OTHERS
12	POWER DISTRIBUTION CENTER (MEDIUM VOLTAGE)	-	-	-	115'-0"	ENCLOSURE PEAK
13	FIRE PUMP ENCLOSURE	-	-	-	108'-0"	ENCLOSURE HIGH POINT & TOP OF STACK
14	SERVICE FIRE WATER STORAGE TANK	-	-	-	178'-3"	TOP OF TANK
15	DEMIN WATER STORAGE TANK	-	-	-	179'-6"	TOP OF TANK
16	AMMONIA UNLOADING/STORAGE AREA	-	-	-	113'-0"	TOP OF PLATFORM
17	COOLING TOWER POWER DISTRIBUTION CENTER	-	-	-	117'-6"	ENCLOSURE HIGH POINT
18	COMBUSTION TURBINE STEP-UP TRANSFORMER	-	-	-	158'-6"	TOP OF FIRE WALL
19	COMBUSTION TURBINE AUX TRANSFORMER	-	-	-	158'-6"	TOP OF FIRE WALL
20	STEAM TURBINE STEP-UP TRANSFORMER	-	-	-	156'-6"	TOP OF FIRE WALL
21	GAS COMPRESSOR ENCLOSURE	-	-	-	108'-6"	ENCLOSURE PEAK
22	SEPTIC TANK AND SANITARY TILE FIELD	-	-	-	-	-
23	PROPERTY BOUNDARY	-	-	-	-	-
24	GAS CONDITIONING HEATER	-	-	-	113'-6"	TOP OF STACK
25	PARKING	-	-	-	-	-
26	HYDROGEN STORAGE AREA	-	-	-	-	-
27	DEMIN WATER TRAILER AREA	-	-	-	-	-
28	STEAM TURBINE ENCLOSURE	-	-	-	132'-0"	ENCLOSURE PEAK
29	SETTLING TANK	-	-	-	130'-0"	TOP OF TANK
30	STANDBY DIESEL GENERATOR	-	-	-	113'-0"	TOP OF ENCLOSURE & TOP OF STACK
31	SECURITY FENCE	-	-	-	-	-
32	500kV SWITCHYARD	-	-	-	-	-
33	SWITCHYARD CONTROLS ENCLOSURE	-	-	-	-	-
34	WATER TREATMENT POWER DISTRIBUTION CENTER	-	-	-	-	-
35	TURBINE AIR INLET FILTER	-	-	-	221'-0"	TOP OF FILTER
36	AUX BOILER STACK	-	-	-	180'-6"	TOP OF STACK

TERMINAL POINTS

T1 NATURAL GAS
T2 WASTE WATER (HOLD)
T3 RAW WATER SUPPLY
T4 NOT USED
T5 TELEPHONE/DATA INTERFACE
T6 POWER EXPORT (HIGH SIDE CB0)
T7 ROAD ACCESS

GENERAL LEGEND

ASPHALT ROAD SURFACING
AGGREGATE SURFACING
CONCRETE SURFACING

NOTES

1. ALL COORDINATES ARE PROVIDED IN VIRGINIA STATE PLANE SOUTH ZONE (NAD83).
2. ELEVATIONS ARE TOP OF EQUIPMENT, BASED ON TOP OF CONCRETE ELEVATION AT 100'-0".

NOT TO BE USED FOR CONSTRUCTION

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NO	DATE	BY	REVISIONS AND RECORD OF ISSUE
D	10/MAY/13		AIR PERMIT APPLICATION SUPPORT (SIEMENS)
C	31/MAR/13		REVISED FOR AIR PERMIT APPLICATION SUPPORT
B	27/MAR/13		ISSUED FOR CLIENT REVIEW
A	20/MAR/13		ISSUED FOR FEASIBILITY STUDY
E	15/MAY/13		REVISED PER CLIENT COMMENTS

1" = 100'

BLACK & VEATCH

C4GT

C4GT PROJECT
CHARLES CITY, VA

GENERAL ARRANGEMENT
SITE ARRANGEMENT - SIEMENS

191629-C1AL-G1004

E

Attachment
Exhibit No. 9D

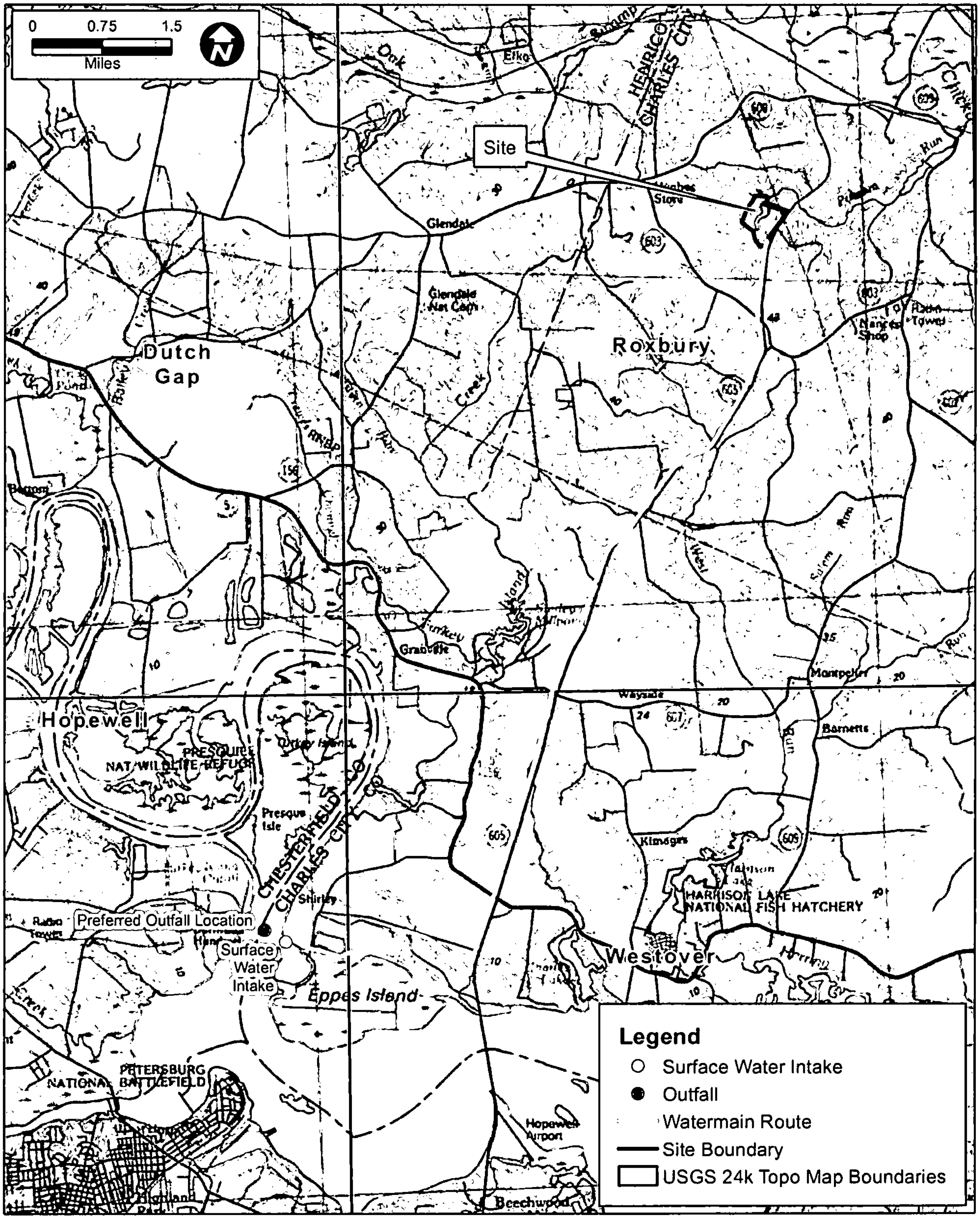

FIGURE 1.
OVERVIEW
CHARLES CITY COMBINED CYCLE
GAS TURBINE PROJECT

Sources: USGS Topographic Quadrangles.

ECT Environmental Consulting & Technology, Inc.

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